IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Brian B. Egan
Serial No. 09/750,766
Filed: 12/28/2000
For: **VOICE OPTIMIZATION IN A NETWORK HAVING VOICE OVER INTERNET PROTOCOL COMMUNICATION DEVICES**

Examiner: Clemence S. Han
Art Unit: 2616

Mail Stop Appeal Brief – Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Sir:

An **APPEAL BRIEF** is filed herewith. Appellant has not enclosed a payment in the amount of $540.00 to cover the fee associated with this appeal brief as required by 37 C.F.R. § 1.17(c) because Appellant previously paid for the Appeal Brief filed on December 23, 2005. The Appeal Brief filed on December 23, 2005 was not sent to the Board of Patent Appeals and Interferences and no decision was rendered in response to the Appeal Brief filed on December 23, 2005. Appellant should not have to pay the full amount of $540.00 for this Appeal Brief because the Appeal Brief filed on December 23, 2005 had been paid for and no decision had been rendered. See M.P.E.P § 1207.04. Appellant notes that the fee for an Appeal Brief increased by $40.00. As such, only a $40.00 fee is due for the current Appeal Brief. The Director is hereby authorized to charge the $40.00 Appeal Brief fee to Deposit Account 14-1315, and to consider this a petition therefor. Appellant encloses a payment in the amount of $490.00 to cover the fee associated with a Two-month Extension of Time and requests that this be considered a petition therefor. If any additional fees are required in association with this Appeal Brief, the Director is also hereby authorized to charge them to Deposit Account 14-1315, and to consider this a petition therefor.

APPEAL BRIEF

(1) REAL PARTY IN INTEREST

The real party in interest is the assignee of record, i.e., Nortel Networks Limited of 2351 Boulevard Alfred-Nobel, St. Laurent, Quebec Canada H4S 2A9, which is wholly owned by Nortel Networks Corporation, a Canadian corporation.

(2) RELATED APPEALS AND INTERFERENCES

This Appeal Brief is related to a Notice of Appeal filed on November 10, 2005, and an Appeal Brief filed December 23, 2005, attached as Appendix A in the Related Proceeding Appendix. In response to the Appeal Brief filed on December 23, 2005, prosecution was reopened through the mailing of a non-final Office Action on February 27, 2006. Appellant filed a response on May 23, 2006. A Final Office Action was mailed on August 25, 2006 and remailed on February 28, 2007, since the Final Office Action mailed August 25, 2006 was sent to the wrong attorney and neither Appellant nor Appellant's current representative received the Final Office Action. In response to the Final Office Action mailed February 28, 2007, Appellant filed a response on April 30, 2007. Appellant then filed a second Notice of Appeal on August 28, 2007. In light of an Advisory Action mailed August 30, 2007, after Appellant had filed the Notice of Appeal, Appellant decided to reopen prosecution and submitted a response to the Advisory Action with a Request for Continued Examination on November 28, 2007. A non-final Office Action was mailed on March 19, 2008 to which Appellant responded on June 12, 2008. A Final Office Action was issued on October 6, 2008. As such, the Appeal Brief filed on December 23, 2005 was not reviewed by the Board of Patent Appeals and Interferences and no decision was rendered in response to the Appeal Brief filed on December 23, 2005. Appellant then filed a Notice of Appeal on December 15, 2008.

(3) STATUS OF CLAIMS

Claims 1-8, 10-18, and 20-23 were rejected with the rejection made final on October 6, 2008. No claim amendments have been made after the final rejection of October 6, 2008. The last claim amendments were made in the Response filed November 28, 2007 and were entered.

Claims 9, 19, and 24 were objected to as being dependent upon a rejected base claims, but would be allowable if rewritten in independent form. Appellant has not rewritten claims 9, 19, and 24 in independent form.

Claims 1-24 are pending and are the subject of this appeal.

(4) STATUS OF AMENDMENTS

All amendments have been entered to the best of Appellant's knowledge. No amendments have been filed after the Final Office Action mailed October 6, 2008.

(5) SUMMARY OF CLAIMED SUBJECT MATTER

In the following summary, Appellant has noted where in the Specification certain subject matter exists. Appellant wishes to point out that these citations are for demonstrative purposes only and that the Specification may include additional discussion of the various elements, citations to which are not pointed out below. Thus, the noted citations are in no way intended to limit the scope of the pending claims.

The claimed invention is directed to an apparatus and method of optimizing voice quality on a network having end-point devices. The claimed invention includes initializing default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per IP packet, and jitter buffer size. Further, performance parameters of the network are measured and if the connection to the network is below a desired level, the default parameters are adjusted. The adjustment of the default parameters may involve re-negotiating a CODEC connection, re-setting the packet size, and/or re-setting the jitter buffer size (Specification, page 3, line 21 through page 4, line 3). Thus, one embodiment of the present invention is a three-phase approach to optimize a VoIP connection, by initializing default parameters, measuring or monitoring network performance, and dynamically intervening or adjusting the default parameters (Specification, page 8, line 33 through page 9, line 1; see also Figure 8).

Independent claim 1 recites a method of voice optimization in a packet switched network, comprising:

initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size (Specification, page 6, lines 13-15 and 24-28; page 7, lines 6-21; and page 10, lines 19-28; see also Figures 1 and 3), and performing one or more tests to determine an optimum configuration for the end-point devices (Specification, page 6, line 30 through page 7, line 5; and page 7, line 22 through page 8, line 32);

measuring performance parameters of the network external to the end-point devices (Specification, page 6, line 29 through page 7, line 5; page 7, line 22 through page 8, line 32; and page 9, lines 6-33); and

evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the

end-point devices based on the evaluating (Specification, page 9, line 34 through page 10, line 18; and page 11, lines 4-23).

Independent claim 14 recites an apparatus to effect voice optimization in a packet switched network, comprising:

an initializer configured and arranged to initialize default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size (Specification, page 6, lines 13-15 and 24-28; page 7, lines 6-21; and page 10, lines 19-28; see also Figures 1 and 3), and perform one or more tests to determine an optimum configuration for the end-point devices (Specification, page 6, line 30 through page 7, line 5; and page 7, line 22 through page 8, line 32);

a measurer configured and arranged to measure performance parameters of the network external to the end-point devices (Specification, page 6, line 29 through page 7, line 5; page 7, line 22 through page 8, line 32; and page 9, lines 6-33);

an evaluator configured and arranged to make a determination as to whether the measured performance parameters signify that a connection to the network is below a desired level of operation (Specification, page 9, line 34 through page 10, line 18; and page 11, lines 4-23); and

an adjuster configured and arranged to adjust the default parameters based upon the determination being that the measured performance parameters signify that the connection to the network is below the desired level of operation (Specification, page 9, line 34 through page 10, line 18; and page 11, lines 4-23).

Independent claim 20 recites an apparatus to effect voice optimization in a packet switched network (Specification, page 1, lines 28-32; and page 3, lines 21-23), comprising:

means for initializing default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size (Specification, page 6, lines 13-15 and 24-28; page 7, lines 6-21; and page 10, lines 19-28; see also Figures 1 and 3), and performing one or more tests to determine an optimum configuration for the end-point devices (Specification, page 6, line 30 through page 7, line 5; and page 7, line 22 through page 8, line 32; see also Figures 1-3);

means for measuring performance parameters of the network external to the end-point devices (Specification, page 6, line 29 through page 7, line 5; page 7, lines 6-11; page 7, line 22 through page 8, line 32; and page 9, lines 6-33; see also Figure 1);

means for making a determination as to whether the measured performance parameters signify that a connection to the network is below a desired level of operation (Specification, page 6, line 30 through page 7, line 5; page 8, line 33 through page 9, line 1; page 9, lines 16-18 and 27-31; page 9, line 34 through page 10, line 18; and page 11, lines 4-23; see also Figures 1 and 2); and

means for adjusting the default parameters based upon the determination being that the measured performance parameters signify that the connection to the network is below the desired level of operation (Specification, page 6, lines 13-15 and lines 24-28; page 8, line 33 through page 9, line 1; page 9, lines 16-18 and 27-31; page 9, line 34 through page 10, line 18; and page 11, lines 4-23; see also Figures 1-3).

Although Appellant argues claims 7 and 8 are patentable based on their dependency on claim 1, claims 7 and 8 are discussed separately here as they were rejected on different grounds than claim 1. Claims 7 and 8 both recite the additional limitation of "wherein the adjusting is manually initiated by a user." Support for this limitation can be found in the Specification at page 9, lines 14-15 and page 10, lines 16-18.

(6) GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether claims 1-6, 10-18, and 20-23 were properly rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,700,895 B1 to Kroll (hereinafter "Kroll") in view of U.S. Patent No. 6,975,629 B2 to Welin (hereinafter "Welin").

B. Whether claims 7 and 8 were properly rejected under rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll in view of Welin and further in view of U.S. Patent No. 7,307,980 B1 to Shah (hereinafter "Shah").

(7) ARGUMENT

A. Introduction

The Patent Office has not shown where all the elements of the pending claims are shown in the prior art with sufficient particularity to sustain an obviousness rejection. In particular, the

Patent Office has not made a *prima facie* case that the combination of Kroll and Welin teaches or suggests each and every element of the claimed invention, or that the differences between the claimed invention and the combination of Kroll and Welin would have been obvious to one of ordinary skill in the art. In particular, the combination of Kroll and Welin fails to teach or suggest "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and **performing one or more tests to determine an optimum configuration for the end-point devices**," as claimed by the present invention. In addition, the combination of Kroll and Welin fails to teach or suggest "performing one or more tests to determine an optimum configuration for the end-point devices," and then "measuring the performance parameters of the network **external to the end-point devices**" in order to see if any adjusting of the initial default parameters is necessary, as claimed by the present invention. Finally, the combination of Kroll and Welin does not teach or suggest "evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating," as claimed in the present invention. As such, Appellant requests that the Board reverse the Examiner and instruct the Examiner to allow the claims for these reasons along with the reasons noted below.

B. Summary Of References

1. U.S. Patent No. 6,700,895 B1 To Kroll

Kroll is directed to a method and system for selecting an optimal size of a jitter buffer in a real time communications system that includes calculating a frame loss rate from packet arrival statistics (Kroll, Abstract). The packet arrival statistics include determining an average queue time a frame spends in a jitter buffer and determining the difference between an expected arrival time and actual arrival time of a sample of data packets into a receiver. *Ibid.* The frame loss rate is calculated by considering the frames that arrive late, frames that are lost in the network and frames that overflow due to an arriving burst of frames. *Ibid.*

The process described in Kroll starts with a particular buffer size (Kroll, Figure 7, step 210). Then the average queue time for a frame is calculated, and the expected arrival times are determined (Kroll, Figure 7, steps 212 and 214). The frame loss rate is calculated by considering

the frames that arrive late, frames that are lost in the network, and frames that overflow due to an arriving burst of frames (Kroll, Figure 7, steps 220-280). The frame loss rate is then used to select the optimal size of the jitter buffer (Kroll, col. 2, lines 36-45).

2. U.S. Patent No. 6,975,629 B2 To Welin

Welin relates to a method of processing first and second record packets of real-time information that includes computing for each packet a deadline interval and ordering processing of the packets according to the respective deadline intervals (Welin, Abstract). Welin is cited by the Patent Office merely for its alleged teaching of selecting coders at run time (Welin, col. 18, lines 4-14).

3. U.S. Patent No. 7,307,980 B1 To Shah

Shah is directed to a router device for use in a communication system having at least two telephone devices in communications with each other for transferring voice information therebetween through a packet switching network (Shah, Abstract). Shah is cited by the Patent Office merely for its alleged teaching of a user manually initiating the adjusting of the type of CODEC being used (Shah, col. 7, line 65 through col. 8, line 34).

C. Legal Standards For Establishing Obviousness

Section 103(a) of the Patent Act provides the statutory basis for an obviousness rejection and reads as follows:

> A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Courts have interpreted 35 U.S.C. § 103(a) as a question of law based on underlying facts. As the Federal Circuit stated:

> Obviousness is ultimately a determination of law based on underlying determinations of fact. These underlying factual determinations include: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) the extent of any proffered objective indicia of nonobviousness.

Monarch Knitting Mach. Corp. v. Sulzer Morat GmBH, 45 U.S.P.Q.2d (BNA) 1977, 1981 (Fed. Cir. 1998) (internal citations omitted).

When rejecting a claim under § 103, the Patent Office must either show that the prior art references teach or suggest all limitations of the claim or explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. *KSR Int'l v. Teleflex, Inc.*, 550 U.S. __, 82 U.S.P.Q.2d (BNA) 1385, 1396 (2007). The gap between the prior art and the claimed invention may not be "so great as to render the [claim] nonobvious to one reasonably skilled in the art." *Dann v. Johnston*, 425 U.S. 219, 230, 189 U.S.P.Q. (BNA) 257, 261 (1976).

While the Patent Office is entitled to give claim terms their broadest reasonable interpretation, this interpretation is limited by a number of factors. First, the interpretation must be consistent with the specification. *In re Hyatt*, 211 F.3d 1367, 1372 (Fed. Cir. 2000); M.P.E.P. § 2111. Second, the broadest reasonable interpretation of the claims must also be consistent with the interpretation that those skilled in the art would reach. *In re Cortright*, 165 F.3d 1353, 1359, (Fed. Cir. 1999); M.P.E.P. § 2111. Finally, the interpretation must be reasonable. *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d 1359, 1369 (Fed. Cir. 2004); M.P.E.P. § 2111.01. This means that the words of the claim must be given their plain meaning unless Appellant has provided a clear definition in the specification. *In re Zletz*, 893 F.2d 319, 321 (Fed. Cir. 1989).

If a claim element is missing after the combination is made, then the combination does not render obvious the claimed invention, and the claims are allowable. As stated by the Federal Circuit, "[if] the PTO fails to meet this burden, then the applicant is entitled to the patent." *In re Glaug*, 283 F.3d 1335, 1338 (Fed. Cir. 2002).

D. Claim 1-6, 10-18, And 20-23 Are Patentable Over Kroll In View Of Welin

Claims 1-6, 10-18, and 20-23 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll in view of Welin. To establish *prima facie* obviousness, the Patent Office must show where each and every element of the claim is taught or suggested in the combination of references or explain why the difference(s) between the prior art and the claimed invention would have been obvious to one of ordinary skill in the art. If the Patent Office cannot establish obviousness, the claims are allowable.

The claimed invention is directed to an apparatus and method of optimizing voice quality on a network having end-point devices. The claimed invention includes initializing default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per IP packet, and jitter buffer size. Further, performance parameters of the network are measured and if the connection to the network is below a desired level, the default parameters are adjusted. The adjustment of the default parameters may involve re-negotiating a CODEC connection, re-setting the packet size, and/or re-setting the jitter buffer size. Thus, one embodiment of the present invention is a three-phase approach to optimize a VoIP connection, by initializing default parameters, measuring or monitoring network performance, and dynamically intervening or adjusting the default parameters.

Independent claims 1, 14, and 20 recite that the initializing step includes setting default parameters for the end-point devices and performing one or more tests to determine the optimum configuration for the end-point devices. Claims 1, 14, and 20 also recite that the measuring of performance parameters is of the network itself; that is, parameters external to the end-point devices are measured in order to evaluate whether the default parameters for the end-point devices are to be adjusted.

As an example, claim 1 recites a method of voice optimization in a packet switched network, comprising:

initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and performing one or more tests to determine an optimum configuration for the end-point devices;

measuring performance parameters of the network external to the end-point devices; and

evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating.

Independent claims 14 and 20 recite similar limitations to those recited in claim 1.

1. **The Combination Of Kroll And Welin Does Not Teach Or Suggest "Initializing End-Point Devices On A Network, Wherein The Initializing Comprises Setting Default Parameters For The End-Point Devices With Respect To Choice Of Preferred CODEC, Number Of Voice Samples Per Packet, And Jitter Buffer Size, And Performing One Or More Tests To Determine An Optimum Configuration For The End-Point Devices"**

The combination of Kroll and Welin does not teach each and every limitation of the claims. The Patent Office admits that Kroll does not teach initializing default parameters with respect to preferred CODEC and number of voice samples per packet, and cites to Welin, col. 18, lines 4-14 to correct this deficiency of Kroll (Final Office Action mailed October 6, 2008, pages 2-3). However, neither Kroll nor Welin teaches or suggests "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and **performing one or more tests to determine an optimum configuration for the end-point devices**." There is no mention in Kroll or Welin of an initializing step where default parameters for the end-point devices are set and then one or more tests are performed to determine the optimum configuration for the end-point devices.

In Kroll, there really is no "initializing" step performed at all. The process just starts with a particular buffer size (Kroll, Figure 7, step 210). Then the average queue time for a frame is calculated, and the expected arrival times are determined (Kroll, Figure 7, steps 212 and 214). The frame loss rate is calculated by considering the frames that arrive late, frames that are lost in the network, and frames that overflow due to an arriving burst of frames (Kroll, Figure 7, steps 220-280). The frame loss rate is then used to select the optimal size of the jitter buffer (Kroll, col. 2, lines 36-45). Thus, Kroll does not teach or suggest "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and **performing one or more tests to determine an optimum configuration for the end-point devices**." Kroll simply does not teach performing **tests** to determine an optimum configuration for the end-point devices. In addition, Kroll is only concerned with selecting the size of a jitter buffer and not the optimum configuration of end-point devices.

The Patent Office cites to col. 7, lines 29-32 of Kroll as allegedly teaching the performing of one or more tests to determine an optimum configuration for the end-point devices as part of the claimed initializing step (Final Office Action mailed October 6, 2008, page 2). Appellant

respectfully disagrees. Column 7, lines 29-32 of Kroll reads: "Once the frame loss is computed for each virtual buffer, an optimal buffer size is then chosen that provides a desirable amount of jitter compensation. At step 212, the average queue time for a frame is calculated." Thus, Kroll merely discloses that once frame loss is computed for each virtual buffer, an optimal buffer size is chosen to provide a desirable amount of jitter compensation. There is no mention of initializing end-point devices where default parameters are set and then tests that are performed in order to determine an optimum configuration for the end-point devices. The cited portion of Kroll does not disclose any tests. Likewise, the cited portion of Kroll does not disclose performing tests to determine an optimum configuration after default parameters are set as part of the initializing step, as recited by the claimed invention. Accordingly, Kroll does not teach or suggest "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and **performing one or more tests to determine an optimum configuration for the end-point devices**," as recited by the claimed invention. Welin also does not disclose this element. Therefore, the combination of Kroll and Welin does not teach or suggest each and every element of the claimed invention, and the claims are patentable.

In the Final Office Action mailed October 6, 2008, the Patent Office cites to Figures 7A and 7B of Kroll, which sets out the process 200 shown in Figure 6, as allegedly teaching performing one or more tests to determine an optimum configuration for the end-point devices (Final Office Action mailed October 6, 2008, pages 4-5). Figures 7A and 7B of Kroll disclose a process 200 for choosing a buffer size. This process 200 of Kroll is not part of an initializing step as claimed in claim 1, where the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and **performing one or more tests to determine an optimum configuration for the end-point devices**. Since the process 200 is not part of an initializing step, it cannot be the claimed tests of claim 1 that are performed to determine the optimum configuration for the end-point devices.

In addition, process 200 of Kroll is not a test that is performed to determine the optimum configuration for the end-point devices. The process 200 is not a test, but a calculation step, where the average queue time for a frame is calculated, and the expected arrival times are

determined (Kroll, Figure 7, steps 212 and 214), and then the frame loss rate is calculated by considering the frames that arrive late, frames that are lost in the network, and frames that overflow due to an arriving burst of frames (Kroll, Figure 7, steps 220-280). The frame loss rate is then used to select the optimal size of the jitter buffer (Kroll, col. 2, lines 36-45). Thus, process 200 of Figures 7A and 7B in Kroll is a calculation of frame loss rate to select an optimal size of a jitter buffer, not a **test to determine the optimum configuration for the end-point devices**, as recited in claim 1.

Furthermore, process 200 of Kroll does not determine the **optimum configuration** for the end-point devices. Process 200 merely determines the optimal buffer size. The optimal buffer size is only one portion of the optimum configuration of the end-point devices. Kroll is only concerned with selecting the size of a jitter buffer and not the optimum configuration of end-point devices. The optimum configuration of the end-point devices includes setting the preferred CODEC, number of voice samples per packet, and jitter buffer size. Since Kroll only determines optimal buffer size, Kroll does not teach or suggest performing one or more tests to **determine an optimum configuration for the end-point devices**, as recited in claim 1.

Welin does not cure the deficiencies of Kroll. Welin was cited merely for its teaching of selecting coders at run time (Welin, col. 18, lines 4-14). Welin is directed to a method of processing first and second record packets of real-time information, the method including computing for each packet a deadline interval and ordering processing of the packets according to the respective deadline intervals. There is no teaching or suggestion in Welin of "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and performing one or more tests to determine an optimum configuration for the end-point devices."

2. The Combination Of Kroll And Welin Does Not Teach Or Suggest "Measuring The Performance Parameters Of The Network External To The End-Point Devices"

The combination of Kroll and Welin does not teach or suggest "performing one or more tests to determine an optimum configuration for the end-point devices," and then "measuring the performance parameters of the network **external to the end-point devices**" in order to see if any adjusting of the initial default parameters is necessary, as claimed by the present invention. As

mentioned above, Kroll does not perform tests in order to determine an optimum configuration for the end-point devices. Moreover, Kroll does not measure performance parameters of the network external to the end-point devices. Appellant previously had amended the claims to recite that the measured performance parameters are external to the end-point devices (see Response filed November 28, 2007). In the Office Action mailed March 19, 2008, the Patent Office did not state specifically where in the cited references the added limitation of the measured parameters being performance parameters of the network **external to the end-point devices** was taught. The Patent Office just repeated its previous assertion that Kroll taught this limitation at steps 212-280 (Office Action mailed March 19, 2008, page 3.

However, Kroll does not teach or suggest measuring performance parameters of the network external to the end-point devices. Instead, Kroll measures the frame loss rate based on past frame loss for a particular buffer size (Kroll, col. 3, line 44 through col. 4, line 5). Thus, what Kroll is retrieving and using to select the size of the jitter buffer (past frame loss based on past packet arrival statistics) is different than what the present invention is using (the measurement of performance parameters of the network external to the end-point devices) to determine if the default parameters for the end-point devices need adjusting. Kroll discloses choosing a buffer size that approximates a desired frame loss rate and a desirable amount of jitter compensation based on past frame loss based on past packet arrival statistics (*Ibid.*; see also Kroll, col. 7, line 10 through col. 9, line 36). Thus, Kroll does not base any decisions on measuring performance parameters of the network external to the end-point devices. Accordingly, Kroll does not teach or suggest "measuring performance parameters of the network external to the end-point devices," as recited by the claimed invention. Welin also does not disclose this element. Therefore, the combination of Kroll and Welin does not teach or suggest each and every element of the claimed invention, and the claims are patentable.

In the Final Office Action mailed October 6, 2008, the Patent Office cites to the Abstract of Kroll and states that the packet arrival statistics are external to the end-point devices (Final Office Action mailed October 6, 2008, page 5). Appellant has reviewed the Abstract of Kroll and finds no teaching of measuring the performance parameters of the network external to the end-point devices. The Abstract of Kroll merely states that the packet arrival statistics include determining an average queue time a frame spends in a jitter buffer and determining the difference between an expected arrival time and actual arrival time of a sample of data packets

into a receiver, and that the frame loss rate is calculated by considering the frames that arrive late, frames that are lost in the network, and frames that overflow due to an arriving burst of frames (Kroll, Abstract). The packet arrival statistics are not performance parameters of the network external to the end-point devices, but instead are statistics relating to the arrival of packets at an end-point device in the network. Thus, Kroll does not teach or suggest "measuring the performance parameters of the network **external to the end-point devices**," as recited in claim 1. Claim 1 is patentable for this additional reason.

Welin does not cure the deficiencies of Kroll. Welin was cited merely for its teaching of selecting coders at run time (Welin, col. 18, lines 4-14). Welin is directed to a method of processing first and second record packets of real-time information, the method including computing for each packet a deadline interval and ordering processing of the packets according to the respective deadline intervals. There is no teaching or suggestion in Welin of "measuring performance parameters of the network external to the end-point devices."

3. The Combination Of Kroll And Welin Does Not Teach Or Suggest "Evaluating Whether The Measured Performance Parameters Signify That A Connection To The Network Is Below A Desired Level Of Operation And, If So, Adjusting The Default Parameters For The End-Point Devices Based On The Evaluating"

As a result of the above deficiencies of Kroll, Kroll also does not teach or suggest "evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating," as claimed in the present invention. Kroll uses the past frame loss based on past packet arrival statistics to determine the size of the jitter buffer. Kroll looks to see if a particular buffer size yields a desired frame loss rate (Kroll, Figure 6, step 194). Whether a particular buffer size yields a desired frame loss rate is not equivalent to evaluating whether the measured performance parameters signify that **a connection to the network** is below a desired level of operation. Kroll thus does not use the measurement of performance parameters of the network external to the end-point devices to evaluate whether a connection to the network is below a desired level, as claimed in the present invention.

Thus, as set forth above, Kroll does not teach or suggest "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point

devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and performing one or more tests to determine an optimum configuration for the end-point devices," "measuring performance parameters of the network external to the end-point devices," and "evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating," as claimed in the present invention.

Welin does not cure the deficiencies of Kroll. Welin was cited merely for its teaching of selecting coders at run time (Welin, col. 18, lines 4-14). Welin is directed to a method of processing first and second record packets of real-time information, the method including computing for each packet a deadline interval and ordering processing of the packets according to the respective deadline intervals. There is no teaching or suggestion in Welin of "evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating," as recited in claim 1.

For the reasons stated above, the combination of Kroll and Welin does not teach the invention as presently claimed. Therefore, claim 1 is allowable over Kroll and Welin. Claims 2-6 and 10-13 depend from claim 1 and are patentable for at least the same reasons set forth above with respect to claim 1.

Independent claims 14 and 20 include limitations that are the same or similar to those in claim 1 and are thus patentable for at least the same reasons set forth above with respect to claim 1. Claims 15-18 and 21-23 depend from claims 14 and 20, respectively, and are allowable over Kroll and Welin for at least the same reasons.

E. Claims 7 And 8 Are Patentable Over Kroll In View Of Welin And Further In View Of Shah

Claims 7 and 8 were rejected under rejected under 35 U.S.C. § 103(a) as being unpatentable over Kroll in view of Welin and further in view of Shah. The standards for obviousness are set forth above.

Claims 7 and 8 depend indirectly from claim 1 and contain all of the limitations of claim 1. Thus, claims 7 and 8 are patentable for at least the same reasons set forth above with respect

to claim 1. As discussed above, the combination of Kroll and Welin does not teach or suggest "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and **performing one or more tests to determine an optimum configuration for the end-point devices**," "measuring performance parameters of the network **external to the end-point devices**," and "evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating," as recited in the claimed invention.

Shah does not cure the deficiencies of Kroll and Welin in this regard. Shah is cited merely for its alleged teaching that adjustments may be manually initiated by a user (Final Office Action mailed October 6, 2008, page 4). Shah does not disclose "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and **performing one or more tests to determine an optimum configuration for the end-point devices**," "measuring performance parameters of the network external to the end-point devices," and "evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating," as recited by the claimed invention. Accordingly, claims 7 and 8 are patentable over the proposed combination of Kroll, Welin, and Shah.

F. Conclusion

As set forth above, the cited references do not disclose each and every limitation of the claimed invention. In particular, the cited references, alone or in combination, do not teach or suggest "initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and **performing one or more tests to determine an optimum configuration for the end-point devices**," "measuring performance parameters of the network external to the end-point devices," and "evaluating whether the measured performance parameters signify that a connection to the network is below a desired

level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating," as recited by the claimed invention. As such, Appellant requests that the Board reverse the Examiner and instruct the Examiner to allow the claims.

Respectfully submitted,

WITHROW & TERRANOVA, P.L.L.C.

By: John R. Witcher, III

John R. Witcher, III
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Date: April 14, 2009
Attorney Docket: 7000-526

(8) CLAIMS APPENDIX

1. A method of voice optimization in a packet switched network, comprising:

initializing end-point devices on a network, wherein the initializing comprises setting default parameters for the end-point devices with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and performing one or more tests to determine an optimum configuration for the end-point devices;

measuring performance parameters of the network external to the end-point devices; and

evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating.

2. The method of claim 1, wherein the adjusting includes performing functions that are selected from a group consisting of re-negotiating a CODEC connection, re-setting of parameters for the packet size and re-setting the jitter buffer.

3. The method of claim 2, wherein the performance parameters being measured are selected from a group consisting of throughput, latency, packet loss, bandwidth, number of network hops to the end-point devices, round trip delay and any combination thereof.

4. The method of claim 3, wherein the measuring is performed with at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

5. The method of claim 1, wherein the performance parameters being measured are selected from a group consisting of throughput, latency and packet loss, bandwidth, number of network hops to the end-point devices, round trip delay, and any combination thereof.

6. The method of claim 5, wherein the measurements are obtained from measuring with at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

7. The method of claim 1, wherein the adjusting is manually initiated by a user.

8. The method of claim 2, wherein the adjusting is manually initiated by a user.

9. The method of claim 1, further comprising registering the end-point devices with a private branch exchange (PBX) on the network, wherein said PBX measures performance parameters between the PBX and the end-point to determine the default parameters.

10. The method of claim 1, further comprising:

measuring and evaluating existing performance parameters with respect to quality of connection, the initializing being based on the evaluating.

11. The method of claim 10, wherein the existing performance parameters being measured are selected from a group consisting of throughput, latency, packet loss, bandwidth, number of network hops to the end-point devices, round trip delay and any combination thereof.

12. The method of claim 1, further comprising evaluating the measured performance parameters with respect to quality of connection and performing the adjusting as a result of the evaluating.

13. The method of claim 1, wherein the adjusting is carried out during transmission of media to the end-point devices.

14. An apparatus to effect voice optimization in a packet switched network, comprising:

an initializer configured and arranged to initialize default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and perform one or more tests to determine an optimum configuration for the end-point devices;

a measurer configured and arranged to measure performance parameters of the network external to the end-point devices;

an evaluator configured and arranged to make a determination as to whether the measured performance parameters signify that a connection to the network is below a desired level of operation; and

an adjuster configured and arranged to adjust the default parameters based upon the determination being that the measured performance parameters signify that the connection to the network is below the desired level of operation.

15. The apparatus of claim 14, wherein the measurer includes software tools configured to measure the performance parameters, the performance parameters being selected from a group consisting of throughput, latency, packet loss, bandwidth, number of network hops to the end-point devices on the network, round trip delay and any combination thereof.

16. The apparatus of claim 15, wherein the measurer includes software tools configured to measure the performance parameters, the software tools including at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

17. The apparatus of claim 16, wherein the software tools include the at least one tool selected from the group consisting of the ping tool, the network trace tool and the packet loss measurement tool.

18. The apparatus of claim 14, wherein the adjuster is configured and arranged to perform functions which are selected from a group consisting of a re-negotiation of a CODEC connection and a re-set of the default parameters for the packet size and a re-set of the default parameters for the jitter buffer size.

19. The apparatus of claim 14, further comprising a private branch exchange (PBX) on the network; a register configured to register the end-point devices with the private branch exchange (PBX) on the network; and a controller responsive to the register completing registration of the end-point devices with the PBX to direct the initializer to initialize the default parameters.

20. An apparatus to effect voice optimization in a packet

switched network, comprising:

means for initializing default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size, and performing one or more tests to determine an optimum configuration for the end-point devices;

means for measuring performance parameters of the network external to the end-point devices;

means for making a determination as to whether the measured performance parameters signify that a connection to the network is below a desired level of operation; and

means for adjusting the default parameters based upon the determination being that the measured performance parameters signify that the connection to the network is below the desired level of operation.

21. The apparatus of claim 20, wherein the measuring means includes software tools configured to measure the performance parameters, the performance parameters being selected from a group consisting of throughput, latency, packet loss, bandwidth, number of network hops to the end-point devices on the network, round trip delay and any combination thereof.

22. The apparatus of claim 20, wherein the measuring means includes software tools configured to measure the performance parameters, the software tools including at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

23. The apparatus of claim 20, wherein the adjusting means includes means for re-negotiating a CODEC connection, means for re-setting the default parameters for the packet size and means for re-setting the default parameters for the jitter buffer size.

24. The apparatus of claim 20, further comprising a private branch exchange (PBX) on the network; means for registering the end-point devices with the private branch exchange (PBX) on the network; and means responsive to the registering means completing registration of the end-point devices with the PBX for directing the initializing means to initialize the default parameters.

(9) EVIDENCE APPENDIX

Appellant relies no evidence, thus this appendix is not applicable.

(10) RELATED PROCEEDINGS APPENDIX

This Appeal Brief is related to a previously filed Notice of Appeal filed on November 10, 2005, and a previously filed Appeal Brief filed for the present application on December 23, 2005, which are attached as Appendix A.

Appendix A

Express Mail Label No.: EV 376 434 606 US
Date of Deposit: November 10, 2005

Attorney Docket No. 27996-097

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/750,766	Confirmation No.	8660
Applicant(s)	:	Brian B. Eagan		
Filed	:	December 28, 2000		
TC/A.U.	:	2665		
Examiner	:	Clemence S. Han		
Docket No.	:	27996-097		
Customer No.	:	35437		
Title	:	VOICE OPTIMIZATION IN A NETWORK HAVING VOICE OVER INTERNET PROTOCOL COMMUNICATION DEVICES		

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL LETTER

Enclosed herewith are the following documents regarding the above-identified non-provisional patent application:

1. Notice of Appeal Under 37 C.F.R. § 1.191 [1 pg.];
2. Check No. 2907 in the amount of $500.00 for appeal fee; and
3. a Return postcard.

The Commissioner is hereby authorized to charge any fee that may be due, or to credit any overpayment, to Deposit Account No. **50-0311,** Ref. No.: **27996-097**. A duplicate copy of this transmittal letter is enclosed.

Respectfully submitted,

Dated: November 10, 2005

Boris A. Matvenko, Reg. No. 48,165
Attorney for Applicants
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Express Mail Label No.: EV 376 434 606 US
Date of Deposit: November 10, 2005

Attorney Docket No. 27996-097

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/750,766	Confirmation No.	8660
Applicant(s)	:	Brian B. Eagan		
Filed	:	December 28, 2000		
TC/A.U.	:	2665		
Examiner	:	Clemence S. Han		
Docket No.	:	27996-097		
Customer No.	:	35437		
Title	:	VOICE OPTIMIZATION IN A NETWORK HAVING VOICE OVER INTERNET PROTOCOL COMMUNICATION DEVICES		

MAIL STOP AF
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

NOTICE OF APPEAL

Pursuant to 37 C.F.R. §1.191, Applicants hereby appeal to the Board of Patent Appeals and Interferences from the Examiner's August 10, 2005 Final Office Action finally rejecting the claims in the above-identified application. A check in the amount of $500.00 for filing this appeal is enclosed herewith, as required by 37 C.F.R. § 1.17(b). The Notice of Appeal is due on or before November 10, 2005.

The Director is authorized to charge any additional fees that may be due, or credit any overpayment of same, to Deposit Account No. **50-0311**, Ref. No. **27996-097**, Customer No. **35437**. A duplicate copy of this Notice is enclosed.

Respectfully submitted,

Dated: November 10, 2005

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Express Mail Label No.: EV 532353935 US
Date of Deposit: December 23, 2005 **Attorney Docket No. 27996-097**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.	:	09/750,766	Confirmation No.	8660
Applicant(s)	:	Brian B. Eagan		
Filed	:	December 28, 2000		
TC/A.U.	:	2665	EV532353935US	
Examiner	:	Clemence S. Han		
Docket No.	:	27996-097		
Customer No.	:	35437		
Title	:	VOICE OPTIMIZATION IN A NETWORK HAVING VOICE OVER INTERNET PROTOCOL COMMUNICATION DEVICES		

Mail Stop Appeal Brief-Patents-Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

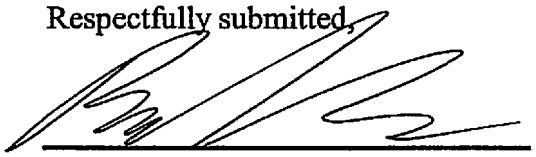
TRANSMITTAL LETTER

Transmitted herewith for filing in the above-identified patent application are the following documents:

1. Appeallants' Brief Pursuant to 37 C.F.R. § 1.192; (13 pgs);
2. Check No. 2983 in the amount of $500.00; and
3. Return postcard.

The Commissioner is hereby authorized to charge any fee that may be due, or to credit any overpayment, to Deposit Account No. **50-0311,** Ref. No.: **27996-097.** A duplicate copy of this transmittal letter is enclosed.

Respectfully submitted,



Dated: December 23, 2005

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Express Mail Label No.: EV 532353935 US
Date of Deposit: December 23, 2005

Attorney Docket No.: 27996-097

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Brian B. Eagan	**Examiner:**	Han, C.S.
Application No.:	09/750,766	**Art Unit:**	2665
Filing Date:	December 28, 2000	**Confirmation No.:**	8660
		Atty Docket No.:	27996-097

Title: **VOICE OPTIMIZATION IN A NETWORK HAVING VOICE OVER INTERNET PROTOCOL COMMUNICAITON DEVICES**

Mail Stop Appeal Brief-Patents - FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPEALLANTS' BRIEF PURSUANT TO 37 C.F.R. § 1.192

In accordance with a Notice of Appeal, filed on November 10, 2005, Applicants submit this Appellants' brief.

1. **Fee**: Enclosed herewith is a check for the fee of $500.00 for filing of a brief in support of an appeal.

2. **Real Party-in-Interest**: All rights to the above referenced patent application have been assigned to:

Nortel Networks Limited
2351 Boulevard Alfred-Nobel
St. Laurent, Quebec H4S 2A9, CANADA

3. **Related Appeals and Interferences**: There are no known other appeals or interferences that would directly or indirectly affect the Board's decision in the present appeal.

4. **Status of the Claims of U.S. Patent Application Serial No. 09/750,766 ("'766 application")**:

Claims 1-24 are pending.

Claims 1-6, 10-18, and 20-23 stand rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,700,895 to Kroll ("Kroll").

Claims 7-9, 19, and 24 are objected as being dependent upon a rejected base claims, but would be allowable if rewritten in independent form including all of the limitation of the base claim and any intervening claims.

5. **Status of Amendments**:

(a) A First Office Action was mailed June 7, 2004.

(b) A Response to the First Office Action was filed October 7, 2004, traversing the Examiner's rejections and objections.

(c) A Second Office Action was mailed February 25, 2005.

(d) A Response to the Second Office Action was filed May 23, 2005, traversing the Examiner's rejections.

(e) A Final Office Action was mailed August 10, 2005.

(f) An Interview with the Examiner was conducted on September 20, 2005, again traversing the Examiner's rejections.

(g) Notice of Appeal was filed November 10, 2005.

(h) No amendment was filed after the Final Office Action.

6. **Summary of the Claimed Subject Matter:**

The present invention is directed to an apparatus and a method for optimizing voice quality on networks that employ voice over Internet Protocol ("VoIP") communication devices.

The optimization is based on measuring network performance pertaining to a quality of the network connection and evaluating the same. (Page 1, lines 28-32; Page 3, lines 21-23).

To optimize voice quality on the network containing VoIP end-point devices, the default parameters of at least some of these devices are initialized and later adjusted, as necessary. (FIGS. 1 and 3; Page 6, lines 13-15). The parameters include CODEC selection, packet size (a number of frames per packet), desired latency, packet loss, available bandwidth, number of router hops, and jitter buffer size. (Page 6, lines 24-28).

At the time of initialization, the VoIP end-point devices register with private branch exchange ("PBX"). In response to registration, a terminal proxy server uses a protocol to instruct the end-point devices to use a CODEC of a particular type, a jitter buffer of a particular size, a frame size of so many voice samples, etc. (FIG. 1; Page 7, lines 6-11).

When a VoIP end-point device registers with an internet protocol PBX ("IP PBX"), the IP PBX may perform a number of tests to determine the optimum configuration for that end-point. A number of software tools can be used to measure network performance (e.g., jitter, available bandwidth, delay, packet loss, latency, etc.), which can be reevaluated after initialization. (Page 6, line 30 to Page 7, line 5; Page 7, lines 22-24). The software tools include a ping tool, a network trace tool and a packet loss measurement tool. (Page 6, line 34 to Page 7, line 1).

The present invention applies a three-phase approach to optimize quality of a VoIP connection: initializing, network performance monitoring/measurement and dynamically intervening or correcting. (FIG. 2; Page 8, line 33 to Page 9, line 1). The initialization and the network performance monitoring/measurement phases are described above. As a result of the network performance monitoring/measurement, the default parameters for the end-point devices

are changed when the measured performance parameters signify that a connection to the network is below a desired level of operation. (Page 9, lines 16-18). The terminal proxy server and the end-point devices make the necessary measurements using the above software tools and report findings to the terminal proxy server, which uses conventional protocol to instruct the end-point devices to make appropriate changes in their default parameter settings. (Page 9, lines 27-31).

The three-phase approach gives the best audio quality with the lowest amount of latency and uses the minimum amount of digital signal processor resources. (Page 10, lines 29-31). The approach optimizes voice quality for the IP networks that have and have not been provisioned for quality of service (QoS). (Page 12, lines 4-9).

The Applicants note that claims 1-24 stand and fall together. However, as required by MPEP 1205, 37 C.F.R. 41.37(c)(1)(v), the Applicants provide herewith specification reference points for each element in independent claim 20. The Applicants note that these reference points are for exemplary purposes only and are not intended to limit the scope of claim 20.

At least Page 1, lines 28-32 and Page 3, lines 21-23 of the present application's specification describe the preamble of claim 20 that states: "An apparatus to effect voice optimization in a packet switched network." At least FIGS. 1 and 3; Page 6, lines 13-15 and lines 24-28 describe "means for initializing default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size." At least FIG 1; Page 6, line 30 to Page 7, line 5; and Page 7, lines 6-11 and 22-24 describe "means for measuring performance parameters of a network." At least FIGS. 1 and 2; Page 6, line 30 to Page 7, line 5; Page 8, line 33 to Page 9, line 1; and Page 9, line 16-18 and 27-31 of the specification describe "means for making a determination as to whether the measured performance parameters signify that a connection to the network is below a desired

level of operation." At least FIGS. 1-3; Page 6, lines 13-15 and lines 24-28; Page 8, line 33 to Page 9, line 1; Page 9, line 16-18 and 27-31 describe "means for adjusting the default parameters based upon the determination being that the measured performance parameters signify that the connection to the network is below the desired level of operation."

7. **Grounds of Rejection to be Reviewed on Appeal**:

Applicants contend that claims 1-24 are novel and not anticipated under 35 U.S.C. 102(e) by Kroll and claims 7-9, 19 and 24 do not depend from invalid base claims.

8. **Argument**:

Independent claims 1, 14 and 20 are not anticipated under 35 U.S.C. 102(e) by Kroll.

In the Final Office Action, the Examiner cited Kroll as an anticipating reference with respect to claims 1-6, 10-18 and 20-23.

Claim 1 of the present application recites, *inter alia*, a method of voice optimization in a packet switched network, comprising: initializing default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size.

Kroll discloses a method and a system for computationally efficient calculation of frame loss rates over an array of virtual buffers. (See, Abstract). Kroll predicts the frame loss rates of arbitrary buffer sizes based upon the arrival statistics for a sample of the packet stream through the network channel. (Col. 3, lines 63-66). Kroll's jitter buffer size can be selected from multiple sizes. (Col. 7, lines 10-18). Kroll calculates a desired frame loss rate based on the selected buffer size. Once, the frame loss is computed for each virtual buffer, an optimal buffer size is then chosen that provides a desirable amount of jitter compensation. (Col. 7, lines 27-32).

As admitted by the Examiner (See, August 10, 2005 Office Action, Page 4, Para. 4) and as pointed out by the Applicant, Kroll does not disclose initializing a preferred CODEC or a number of voice samples per packet. In the August 10, 2005 Office Action, the Examiner implies that claim 1 is a Markush claim and thus it is possible to invalidate the claim by finding only one of the listed parameters for initialization. Accordingly, the Examiner concluded that because Kroll discloses jitter buffer size, it anticipates claim 1.

Clearly, claim 1 is not a Markush claim. According to MPEP,"...[a] Markush-type claim recites alternatives in a format such as 'selected from the group consisting of A, B and C.' See *Ex parte Markush*, 1925 C.D. 126 (Comm'r Pat. 1925)." (See, MPEP 803.02). Claim 1 does not recite initialization of one parameter from a group of parameters; instead, it requires initialization of all three parameters, i.e., preferred CODEC, number of voice samples per packet, and jitter buffer size.

By way of an example, claim 2 is a Markush claim. Claim 2 contains a phrase "from a group consisting of," which indicates that a selection of one of the elements in the group is desired. This is different from the language used in claim 1, where all three elements are required for initialization. Kroll does not disclose initialization of all three parameters. Hence, it does not disclose all elements of claim 1 and claim 1 should be allowed. Claims 2-13 depend from claim 1 and are not anticipated by Kroll for at least the reasons stated above with respect to claim 1.

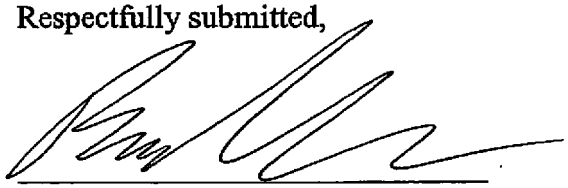
Independent claims 14 and 20 include limitations that are the same as or similar to those of independent claim 1 and, thus, are not anticipated by Kroll for least the same reasons. Claims 15-19 and 21-24 depend from claims 14 and 20, respectively, and are allowable over Kroll for at least the reasons stated above with respect to claim 1. Hence, the objection of claims 7-9, 19 and 24 is now moot.

CONCLUSION

All pending claims of the application are valid over the cited references. Allowance of the application is respectfully requested.

Dated: December 23, 2005

Respectfully submitted,



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APPENDIX A

Copy of Claims

1. (Original) A method of voice optimization in a packet switched network, comprising:

initializing default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size;

measuring performance parameters of a network; and

evaluating whether the measured performance parameters signify that a connection to the network is below a desired level of operation and, if so, adjusting the default parameters for the end-point devices based on the evaluating.

2. (Original) A method as in claim 1, wherein the adjusting includes performing functions that are selected from a group consisting of re-negotiating a CODEC connection, re-setting of parameters for the packet size and re-setting the jitter buffer.

3. (Original) A method as in claim 2, wherein the performance parameters being measured are selected from a group consisting of throughput, latency, packet loss, bandwidth, number of network hops to the end-point devices, round trip delay and any combination thereof.

4. (Original) A method as in claim 3, wherein the measuring is performed with at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

5. (Original) A method as in claim 1, wherein the performance parameters being measured are selected from a group consisting of throughput, latency and packet loss, bandwidth, number of network hops to the end-point devices, round trip delay, and any combination thereof.

6. (Original) A method as in claim 5, wherein the measurements are obtained from measuring with at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

7. (Original) A method as in claim 1, wherein the adjusting is manually initiated by a user.

8. (Original) A method as in claim 2, wherein the adjusting is manually initiated by a user.

9. (Original) A method as in claim 1, further comprising registering the end-point devices with a private branch exchange (PBX) on the network, wherein said PBX measures performance parameters between the PBX and the end-point to determine the default parameters.

10. (Previously Presented) A method as in claim 1, further comprising:

measuring and evaluating existing performance parameters with respect to quality of connection, the initializing being based on the evaluating.

11. (Previously Presented) A method as in claim 10, wherein the existing performance parameters being measured are selected from a group consisting of throughput, latency, packet loss, bandwidth, number of network hops to the end-point devices, round trip delay and any combination thereof.

12. (Previously Presented) A method as in claim 1, further comprising evaluating the measured performance parameters with respect to quality of connection and performing the adjusting as a result of the evaluating.

13. (Previously Presented) A method as in claim 1, wherein the adjusting is carried out during transmission of media to the end-point devices.

14. (Previously Presented) An apparatus to effect voice optimization in a packet switched network, comprising:

an initializer configured and arranged to initialize default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size;

a measurer configured and arranged to measure performance parameters of a network;

an evaluator configured and arranged to make a determination as to whether the measured performance parameters signify that a connection to the network is below a desired level of operation; and

an adjuster configured and arranged to adjust the default parameters based upon the determination being that the measured performance parameters signify that the connection to the network is below the desired level of operation.

15. (Previously Presented) An apparatus as in claim 14, wherein the measurer includes software tools configured to measure the performance parameters, the performance parameters being selected from a group consisting of throughput, latency, packet loss, bandwidth, number of network hops to the end-point devices on the network, round trip delay and any combination thereof.

16. (Previously Presented) An apparatus as in claim 15, wherein the measurer includes software tools configured to measure the performance parameters, the software tools including at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

17. (Previously Presented) An apparatus as in claim 16, wherein software tools include at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

18. (Previously Presented) An apparatus as in claim 14, wherein the adjuster is configured and arranged to perform functions which are selected from a group consisting of a re-negotiation of a CODEC connection and a re-set of the default parameters for the packet size and a re-set of the default parameters for jitter buffer size.

19. (Previously Presented) An apparatus as in claim 14, further comprising a private branch exchange on the network; a register configured to register the end-point devices with the private branch exchange (PBX) on the network; and a controller responsive to the register completing registration of the end-point devices with the PBX to direct the initializer to initialize the default parameters.

20. (Previously Presented) An apparatus to effect voice optimization in a packet switched network, comprising:

means for initializing default parameters for end-point devices on a network with respect to choice of preferred CODEC, number of voice samples per packet, and jitter buffer size;

means for measuring performance parameters of a network;

means for making a determination as to whether the measured performance parameters signify that a connection to the network is below a desired level of operation; and

means for adjusting the default parameters based upon the determination being that the measured performance parameters signify that the connection to the network is below the desired level of operation.

21. (Previously Presented) An apparatus as in claim 20, wherein the measuring means includes software tools configured to measure the performance parameters, the performance parameters being selected from a group consisting of throughput, latency, packet

loss, bandwidth, number of network hops to the end-point devices on the network, round trip delay and any combination thereof.

22. (Previously Presented) An apparatus as in claim 20, wherein the measuring means includes software tools configured to measure the performance parameters, the software tools including at least one tool selected from a group consisting of a ping tool, a network trace tool and a packet loss measurement tool.

23. (Previously Presented) An apparatus as in claim 20, wherein the adjusting means includes means for re-negotiating a CODEC connection, means for re-setting the default parameters for the packet size and means for re-setting the default parameters for the jitter buffer size.

24. (Previously Presented) An apparatus as in claim 20, further comprising a private branch exchange on the network; means for registering the end-point devices with the private branch exchange (PBX) on the network; and means responsive to the registering means completing registration of the end-point devices with the PBX for directing the initializing means to initialize the default parameters.

Serial No. 09/750,766 File No. 27996-097 By: BM

Title: Voice Optimization in a Network Having Voice

Application of Brian B. Egan Date: 12/28/00

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